

Title (en)

Method for post-weld heat treatment of welded components made of gamma prime strengthened superalloys

Title (de)

Verfahren zur Nachschweißwärmebehandlung von Schweißkomponenten aus Gamma-Strich-verstärkten Superlegierungen

Title (fr)

Procédé pour un traitement thermique après soudure de composants soudés en superalliages consolidés par précipitation gamma prime

Publication

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Application

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Priority

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Abstract (en)

[origin: EP2815841A1] The invention relates to a method of post-weld heat treatment of a without a filler material electron beam or laser welded high strength component made of a gamma prime (³) strengthened superalloy based on Ni or Co or Fe or combinations thereof. The method consists of the following steps a) providing the welded component, then b) heating the welded component by applying a rapid heating-up rate in the range of about 20 to 40°C/min during the entire temperature range from RT up to a temperature T₁ of at least 1000°C, then c) holding the welded component at T₁ and then heating the component by applying a slow heating-up rate of about 5°C/min to a final temperature T_f, then d) holding the welded component at T_f for a time t_f, wherein isothermal dwell time t_f is sufficient for at least partially dissolving the gamma prime phase in the weld and also in the base material surrounding the weld; then e) cooling the component with a cooling rate of about #¥ 20°C/min and f) finally optionally applying a precipitation hardening treatment according to the known state of the art

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Cited by

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